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ABSTRACT

This paper explores how a virtual learning environment (WebCT) can be used to facilitate learning within a community of practice on a Postgraduate Diploma in Management by work-based learning at Coventry University (England). The paper is part of a wider investigation into the use and efficacy of online support in work-based learning environments being carried out at Coventry University. The aim of this wider research is to develop a pedagogy for effectively integrating online support into the design of work-based learning programs. In this current paper the theory of situated learning that underpins the approach is explored, and evidence from in-depth interviews, focus groups, and electronic discussions are considered in order to explore the lsuccess of the situated learning in a virtual combination of university, workplace, and the wider professional and academic community. The paper concludes with remarks about the power and effectiveness of the approach. (Contains 22 references.) (Author/MES)

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VIRTUAL LEARNING IN THE WORKPLACE: THE POWER OF 'COMMUNITIES OF PRACTICE'

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Abstract

This paper explores how a virtual learning environment (WebCT) can be used to facilitate learning within a 'community of practice' on a Postgraduate Diploma in Management by work-based learning at Coventry University, England. The paper is part of a wider investigation into the use and efficacy of online support in work-based learning environments being carried out at Coventry University. The aim of this wider research is to develop a pedagogy for effectively integrating online support into the design of work-based learning programmes. In this current paper the theory of 'situated learning', that underpins the approach, is explored and evidence from in-depth interviews, focus groups and electronic discussions are considered in order to explore the success of the situated learning in a virtual combination of university, workplace and the wider professional and academic community. The paper concludes with remarks about the power and effectiveness of the approach.

Keywords

communities of practice, collaborative learning, situated learning, virtual communities, virtual learning environment (VLE)

Introduction

The research is set within a broad social backdrop in which technology is facilitating a change in working patterns towards more flexible home-based or multi-location working where virtual learning and development are key requirements. The work addresses a changing business and economic environment in which the educational emphasis is moving towards the provision of transferable generic skills and more vocationally orientated curricula delivered using more flexible teaching methods. In this paper I mirror these developments by examining a mode of education that brings together the use of a VLE with a more flexible approach to learning. The main thrust of the paper is the application of 'situated learning' theories to this new work-based approach to education in which communications and information technology (C&IT) are utilised to the full.

Historically, work-based learning programmes were not developed with on-line support in mind. Previous research on the integration of technology into the curriculum (Laurillard, 1993 & 1995; Conole & Oliver, 1998; McConnell, 2000) indicates that it requires a complete rethink from first principles in course design and delivery. The Postgraduate Diploma in Management at Coventry University (PgD) has been pedagogically re-engineered to create a virtual community of practice as the main arena for learning. This follows the theoretical approach of Lave and Wenger (1991) who argued that learning is a function of the activity, context and culture in which it occurs (i.e., it is situated). Thus, according to Lave and Wenger, social interaction is a critical component of situated learning as learners engage with a community of practice which embodies certain beliefs, behaviours and intersubjectively held knowledge. In this research I look at how this social interaction can be facilitated on the PgD using the online support afforded by the VLE WebCT. Firstly, in order to contextualise the research an appreciation of the course design is required.

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The Postgraduate Diploma in Management (PgD)

The postgraduate diploma has the classical features of a work-based programme. It has a negotiated curriculum, autonomous learning, a focus on experiential and reflective processes, and is designed to develop transferable cognitive and lifelong learning skills. The course can be represented by figure 1.

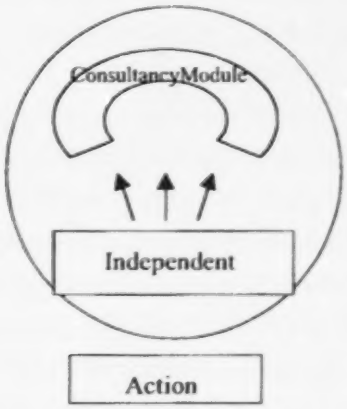

Figure 1: The postgraduate diploma in management - course structure

At the heart of the course is a double module of Independent Study. Alongside this double module is a compulsory 'Consultancy Module' that involves the students in carrying out a group assignment in a real business organisation. These three modules are encapsulated within a framework of 'action learning' in which students meet monthly in action learning sets to support each other in their projects and assignments. The attendance pattern and student support involves:

- Two 2-day Residentials
- Monthly Action Learning Set meetings (ALS meetings)
- Online Support via WebCT

The residentials are held at the commencement of the programme in order to allow course induction and a re-orientation of the students to a new educational experience. As Boud (2001) points out, a considerable effort in briefing students and orienting them to the demands of work-based study is necessary. Many have in their minds a model of education that is organised around academic disciplines, with a syllabus and content delivered through lectures and seminars in the traditional way. This is not the case with work-based learning.

The monthly action learning sets provide an opportunity for emotional support, a forum for social interaction with peers, and an arena for public reflection. The power of action learning is well documented (Pedler, 1991; McGill & Beaty, 1995). In the context of the postgraduate diploma action learning provides the backbone of the learning, and the function and process of the set forms a major component of the community of practice described later.

Central to the delivery of the course is the use of the integrated virtual learning environment (VLE) WebCT. This tool, which supports all 2000+ modules at Coventry University, provides a platform on which the online support for learners is facilitated (Deepwell & Syson, 1999). WebCT provides all the normal features of a VLE such as Email, bulletin boards, chat rooms, contents areas, www portals, electronic library, online assessments, student marks etc. etc. However, I feel the most valuable feature of WebCT, which is central to the support given to the participants on the PgD, is the asynchronous bulletin board which facilitates computer-mediated conferencing (CMC).

3

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The asynchronous conferencing allows the learning process in operation at the monthly face-to-face ALS meetings to be continued in the weeks between. Before outlining the methodology used in the research I will briefly discuss the theory of situated learning that underpins the work.

Situated Learning

Jean Lave and Etienne Wenger introduce the concepts of situated learning and communities of practice in their influential (1991) book , '*Situated learning. Legitimate peripheral participation*'. In this work, Lave and Wenger undertake a radical rethinking of the conception of learning. They argue that most accounts of learning ignore the basic social nature of the learning process. They propose that learning is a process of participation in communities of practice: with the participation at first legitimately peripheral but gradually increasing in engagement and complexity. Their analysis presents a radical critique of contemporary views of pedagogy and represents a new understanding of learning that has wide implications for course design.

Lave and Wenger (1991) provide an analysis of situated learning in five different settings: Yucatec midwives, native taylors, navy quartermasters, meat cutters and alcoholics. In all cases there was a gradual acquisition of knowledge and skills as novices learned from experts in the context of everyday activities. There was little observable teaching; the more basic process was learning by engagement with the community.

From their research they define a community of practice as a group of practitioners who jointly hold a socially constructed view of the meaning of their subject knowledge and what it takes to be an expert in the field. The term 'community' does not necessarily imply co-presence but suggests a group who participate in an activity system about which they share understandings concerning what they are doing and how it should be done.

This model of learning emphasises the inherently socially negotiated quality of meaning and claims that learning and knowing are embedded in the relations and interactions of people engaged in activities within their socially and culturally structured world. Learning becomes a social practice in a world of jointly constructed meaning and knowledge.

The model begins with newcomers to the community being granted legitimate peripheral participation as a means of both absorbing and being absorbed in the culture of the practice. From this peripheral perspective learners gradually construct a general idea of what constitutes the practice of the community. Legitimate peripheral participation is the core of the learning that takes place. This peripheral activity gives rise to a *learning curriculum* which is a series of learning experiences available to the peripheral learner within the community of practice. The learning curriculum is thus '*situated*', in that it cannot be considered in isolation or analysed apart from the social relations that shape legitimate peripheral participation in the community.

A quote from Lave (1999, p. 68) nicely encapsulates the process.

> *Newcomers become oldtimers through a social process of increasingly centripetal participation which depends on legitimate access to ongoing community practice. Newcomers develop a changing understanding of practice over time from improvised opportunities to participate peripherally in ongoing activities of the community. Knowledgeable skill is encompassed in the process of assuming an identity as a practitioner, of becoming a full participant, an oldtimer.*

The model sees learning as a transformation of newcomer to oldtimer rather than a process of transmission of skills from tutor to pupil. In addition, it alters the normal Piagean conceptualisation of learning from something that takes place in the individual mind, as an accommodation of new mental models and structures, to something that takes place in a participation framework. Learning is, within this model, distributed among co-participants, not a

one person act. Social constructivism (Vygotsky, 1978) is the key process at work. Social constructivism broadens Piaget's view of individuals constructing knowledge and poses the question, *is the 'mind' located in the head or in social action?* (Cobb, 1994). If the mind resides in our heads then we can think of learning as ***acquiring*** knowledge; if the mind is influenced and shaped by society, social action and social responses - as in a community of practice - then we can think of learning as **participating** in knowledge held jointly by the community.

As Lave and Wenger (1999) state in their contribution to Leach and Moon's book, *'Learners and Pedagogy'*, if the novice does not learn directly from the expert but from peers and the rest of the community then knowledge can be considered not to reside in an individual but to reside within the community as a whole - *mastery resides not with the master but in the organisation of the community of practice of which the master is a part.* This decentering of the learning process moves the focus of the learning away from pedagogy and the skills of the master to the efficacy of the community's learning resources. Thus the problems for the university tutor are not those of pedagogy – how best to teach – but problems of how the community of practice involved can be replicated within the confines of the university's learning environment. This is the issue I am exploring within this paper.

Methodology

The work has been carried out within an action research framework (Carr and Kemmis, 1986; McNiff, 1988; Elliot, 1996). I have taken a stance as an 'insider researcher' and endeavoured to collaborate with the learners on the PgD in an effort to understand the student experience. The work has centred on a change intervention (the introduction of an online learning environment for work-based learning) which has been watched and examined for its impact. Several cyclical iterations of the research have been planned; this paper represents the results of one of them based on a preliminary analysis of the data.

Firstly, I analysed the content of the conference messages on the bulletin board. The WebCT bulletin board stores every message posted and allows a printed compilation of every piece of information entered into the system. I concentrated on understanding the nature of the online communication and the purpose the sender intended for the message. Having reviewed the vast array of methodologies available for analysing communication patterns (Holsti, 1968), I decided that, at this stage, a simple content analysis was most appropriate.

CMC messages have distinct characteristics (Mason, 1993). Unlike text records acquired independently from respondents through interview or diary methods, CMC messages are produced in collaboration with others and as part of an asynchronous interchange. The vocabulary and style of CMC is different to that of formal writing or informal conversation: it is a hybrid '*computer-speak*' that is half way between the two. The inclusion of the abbreviated 'text-message format', so popular with modern mobile phone users, adds a further uniqueness to the data. Beadin (1999) notes that this type of computer-speak should be encouraged since learning online increases when learners are allowed to discuss issues in their own way without being manipulated or controlled. For my analysis I printed out all the contributions to the PgD CMC and then used 'contribution clusters' to group the messages. I defined a contribution cluster as a theme within the messages that signified a meaning and purpose intended for the contribution.

To triangulate the data I carried out focus groups and in-depth interviews to improve my understanding of the participant's experiences and intentions. As Morgan (1988) points out focus groups can provide a rich source of qualitative data. For analysis purposes I made a TV video recording of the focus groups and further recorded participant's contributions by using rich pictures. These involved the focus group participants making a pen and paper drawing on flip chart paper that represented their online experience on the PgD. Group members then spoke to these drawings elaborating on their intended messages. Unstructured in-depth interviews were also carried out with a number of learners to explore their feelings and intentions in more detail.

The focus groups and in-depth interviews allowed further interrogation of the issues that emerged from the content analysis of the CMC postings. Gradually a picture emerged that gave me an overall understanding of how learning was taking place in the virtual community I had created.

Discussion of Results

The research project is not yet complete but my preliminary analysis of the data points to an interesting explanation of the learning process in action.

In accordance with the theory underpinning the research, to become a full member of a community of practice requires social interaction with, and access to:

- A wide rang of ongoing authentic activities
- Old-timers
- Peers and other members of the community
- Relevant information
- Learning resources
- Opportunities for participation.

So, how much of this is provided by the course? Clearly the workplace provides authenticity and the PgD activities allow participation. The social interaction and collaboration are provided by both the action learning set activity and the collaborative assignment required in the consultancy module. The relevant information and the access to learning resources are provided by the WebCT study web. But, is the recipe complete? What community of practice is being joined and how is it replicated in the course's overall learning environment?

In trying to answer this question the research suggests firstly that the community of practice does not reside in the student's workplace. Respondents made it clear that, although some expert practitioners were present in their place of work, in general, they were not surrounded by expert colleagues. In some instances – for example in the case of a company accountant – students were the only practitioner in their discipline. Students did have company mentors who were a source of support and advice, but in general, the respondents agreed that the community of practice resided beyond the workplace environment.

Secondly, the tutors on the course made no explicit attempt to artificially construct a community of practice. This would have limited the social construction of the student's arena for learning to the interpretation of the community of practice that the tutors held: clearly a bounded scenario. The students on the course were from very diverse backgrounds and had very different learning objectives for the course. It would not have been possible for the tutors to construct multiple communities appropriate for each student's needs. Constructing an appropriate community of practice was beyond the bounds of the tutors and would not have achieved an authentic learning situation.

Having ruled out the two obvious explanations of the nature of the learning community, the picture that emerged from the data was one in which the community of practice existed from a mixture and combination of the following:
See Figure 2.

- The social interaction between the learners on the course
- Social interaction with mentors and some expert colleagues at work
- Contact with tutors and university academics
- Engagement with academic literature/resources
- Collaboration with other learners
- Exposure to how other managerial experts operate

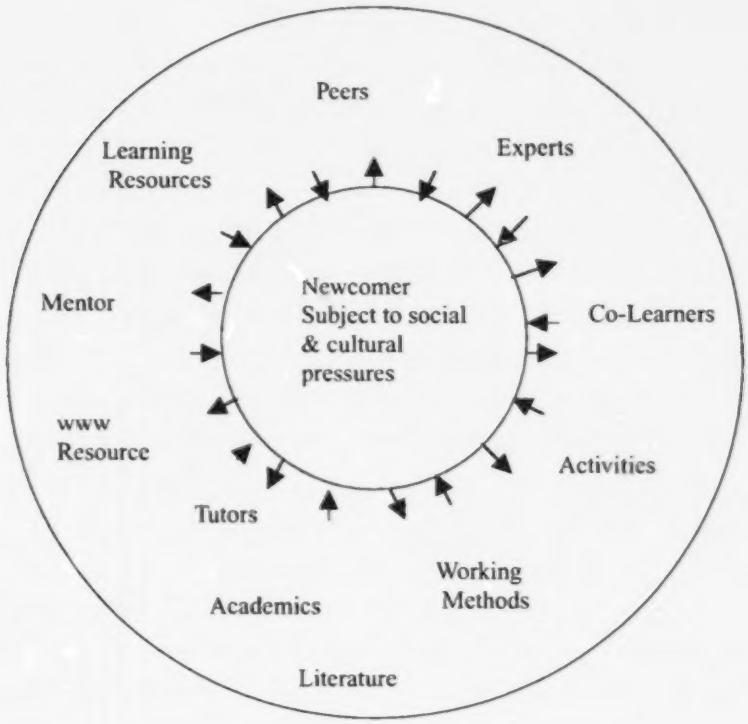

Figure 2: The virtual community of practice on the PgD

The research supported this picture of the community in several ways. Respondents talked repeatedly about the value and richness of the support received from their peers and co-learners.

'the action learning set was the most supportive part of the course',

'it was useful seeing how other members of the set challenged my ideas and made me think differently',

'without the support of my fellow students I think I would have given up the course.'

The emotional and academic support afforded by action learning sets is well documented, but clearly, within the learning context provided by the course, this feature was regarded very highly by participants.

The various assignments on the PgD created numerous opportunities for legitimate peripheral participation in the workplace. Students reported that being on the course gave them a licence to explore and engage with areas of their business that stretched their expertise. Mentors and expert colleagues gave them time and advice in a fashion similar to; *'master and apprentice'*, but in a more socially engaging manner. The contact was more routine and everyday, without any hint of a power differential.

The CMC facility allowed constant interaction with university academics and co-learners from a much broader society of managerial practitioners. Asynchronous conferencing within the WebCT study web and other *'listserve'* type external discussions brought a dimension to the students' interactions that could be described as "academically and socially stimulating".

'the bulletin board allowed me to keep in touch and stay focussed'.

'electronic resources posted by others gave me heaps of ideas for my project'.

'I checked the web every day and found it motivated me to contact others on the course.'

From the analysis of the CMC transcripts it was clear to me that the collaborative nature of the consultancy assignment created the highest degree of legitimate participation and reflected the whole ethos of the situated learning process. The teamwork involved and the need to engage with a real, live business problem allowed a level of authentic participation that, through cultural and social interaction with the players concerned, provided a rich social experience. The transcripts suggested that students learned by doing, but more than this, they collectively built a body of knowledge about the organisation and its problems which was held by the group, not by one individual. No one single member held all the answers; they were creating a microcosm of the community of practice they were aspiring to join. The learning taking place at the micro level on this one assignment mirrored the situated learning ethos of the whole course.

Concluding Remarks

Having reviewed the theory and the results associated with the PgD what can be concluded about learning in virtual communities of practice on the web?

The communications revolution brings a new form of social existence and with it a new opportunity for learning. Boden and Molotch (1994) have argued that co-presence is so important to communication and social relationships that when it cannot be achieved anything else is second best. They state that when people can't actually secure a state of co-presence, they strive to approximate it as best they can by using the telephone or internet. While face-to-face communication has a unique richness and range, impossible to simulate on the web, when it comes to learning through social and cultural mechanisms of interaction and participation, this study has shown that virtual communities of practice can compete. The dispersed nature of both the community and the knowledge held atomistically by its members makes WebCT an ideal tool to trawl the various depositories of knowledge in a sequence of legitimate activities that brings an ever increasing confidence and expertise for the student.

Stone's (1992) paper can also help to contextualise the results and take a wider view of the findings. Stone reflects on the dispersed nature of knowledge and practices and gives a useful definition of virtual communities; *...passage points for collections of common beliefs and practices that unite people who are physically separated* (Stone, 1992, p. 507).

The definition builds on Lave and Wenger's (1991) definition and encapsulates the view that a virtual community is a socially and culturally structured world involving physical separation. Despite this lack of co-presence Stone outlines numerous examples in which virtual identities and cultures have been achieved in a solely text based medium. He argues the positives and negatives of virtual communities but illustrates the power of the interactions in creating reality for the participants. The research indicates that it is this reality that participants on the PgD have been experiencing within the combination of university, workplace and the wider professional and academic community. The results suggest that the virtual community of practice has provided an arena in which students have been able to develop their identities as practitioners and scholars in a supportive and challenging environment.

To conclude, the study has indicated that the ethos and requirements of situated learning can be created virtually with possible benefits for work-based learning students. I would suggest that in the higher education sector the power of situated learning needs to be considered further, so that course designers can turn revised pedagogy into curricular in which the new technology is coherently and effectively embedded. Only in this way will the real power of the community of practice be realised.

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